9589

Diag. Cht. Nos. 1259, 1260 & 1114

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

DESCRIPTIVE REPORT
(HYDROGRAPHIC)

Type of Survey ... HYDROGRAPHIC

Field No. ... AHP-40-2-76

Office No. ... H-9589

LOCALITY

State ... FLORIDA

General Locality ... WEST COAST OF FLORIDA

Locality ... OFFSHORE OF HORSESHOE POINT

1976

CHIEF OF PARTY
John O. Rolland, William R. Daniels

LIBRARY & ARCHIVES

DATE ... April 1, 1978

☆U.S. GOV. PRINTING OFFICE: 1976—669-441

9589

Area 4

charts
11408 - 1259
11407 - 1260
11400 - 1114

NOAA FORM 77-28 (11-72) | U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION | REGISTER NO.

HYDROGRAPHIC TITLE SHEET

H-9589

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD NO. AHP-40-2-76

State Florida

General locality West Coast of Florida

Locality ~~Vicinity of Cedar Keys~~ Offshore of Horseshoe Point

Scale 1:40,000 Date of survey 12 Feb 1976 - 6 Aug 1976

Instructions dated 20 August 1974 Amendment #1 14 April 1975 Amendment #2 7 September 1976 Project No. OPR-508-AHP-75

Vessel NOAA Launches 1255 & 1257

Chief of party CDR John O. Rolland and LCDR William R. Daniels

Surveyed by LCDR D.M. Wilson, LCDR A. Theberge, Jr., LT D. Drake, LT R.P. Floyd, ENS S.R. Ellis

Soundings taken by echo sounder, hand lead, ~~pole~~

Graphic record scaled by DMW, RPF, ELM, GSL, RS, DB

Graphic record checked by DMW, RPF, ELM, GSL, RS, DB, LCG, RAL

Protracted by N/A Automated plot by AMC-Calcomp 618

Verification by AMC- Verification Branch R.R. Hill

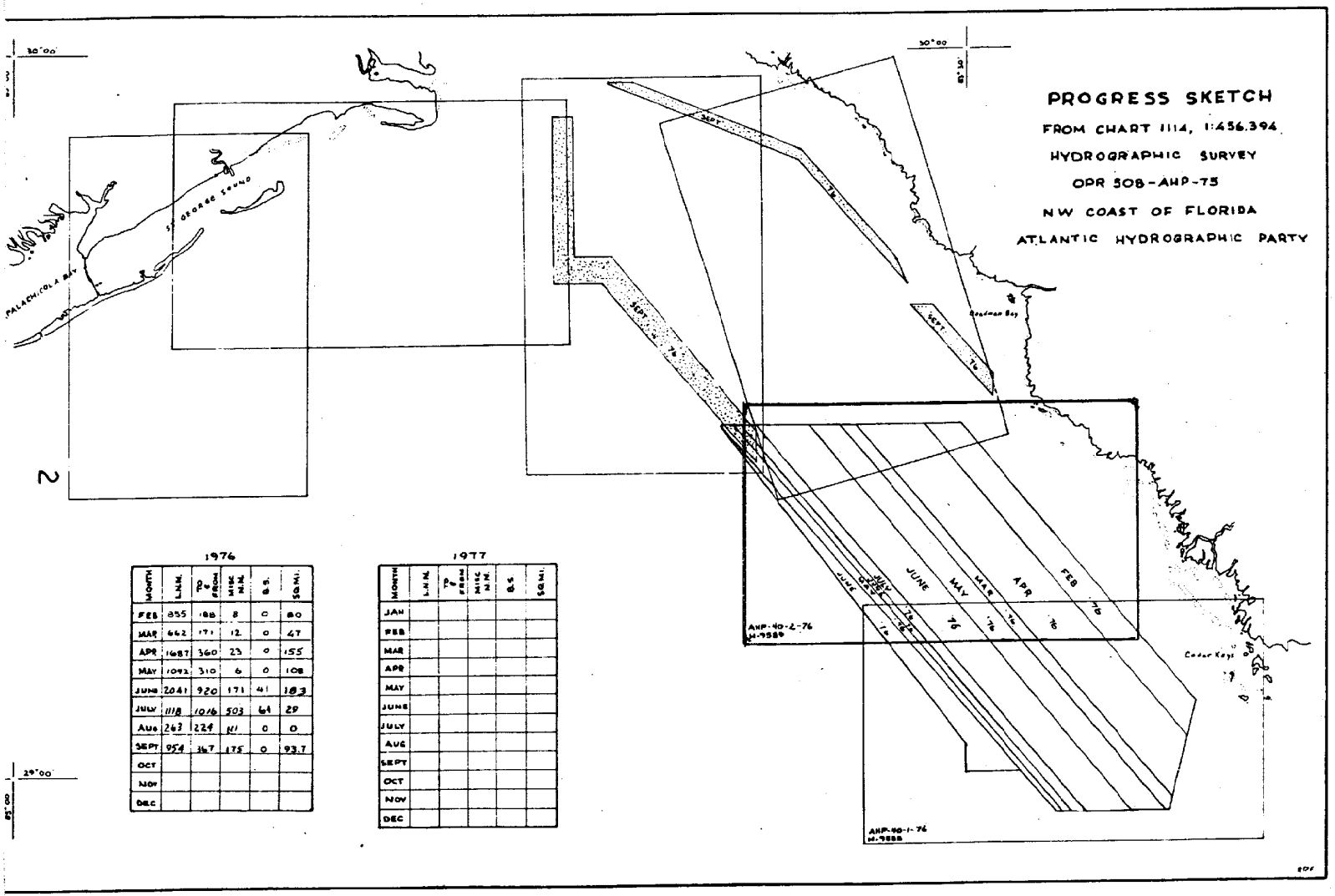
Soundings in ~~fathoms~~ feet at MLW ~~MLLW~~

REMARKS:

Appld To Chts. 8-10-78 PST

NOAA FORM 77-28 SUPERSEDES FORM C&GS-537.

☆U.S. G.P.O. 1972-769-565/519 REG.#6



1976

MONTH	L.N.M.	TO FROM	MISC N.M.	B.S.	SQ.MI.
FEB	855	188	8	0	80
MAR	662	171	12	0	47
APR	1687	360	23	0	155
MAY	1092	310	6	0	108
JUNE	2041	920	171	41	183
JULY	1118	1016	503	64	29
AUG	243	229	NI	0	0
SEPT	954	367	175	0	93.7
OCT					
NOV					
DEC					

1977

MONTH	L.N.M.	TO FROM	MISC N.M.	B.S.	SQ.MI.
JAN					
FEB					
MAR					
APR					
MAY					
JUNE					
JULY					
AUG					
SEPT					
OCT					
NOV					
DEC					

DESCRIPTIVE REPORT

TO ACCOMPANY

HYDROGRAPHIC SURVEY H-9589 (AHP 40-2-76)

SCALE: 1:40,000 1976
VESSEL: Hydrographic Surveys Branch CHIEF: William R. Daniels

A. PROJECT

This project was accomplished under Project Instructions OPR-508-AHP-75, Northwest Coast of Florida, 20 August 1974. The instructions were amended by Change Number 1, Amendment to Instructions, 14 April 1975, and Change Number 2, Amendment to instructions, 7 September 1976.

B. AREA SURVEYED

The area encompassed by the survey was offshore of Horseshoe Point, Florida. The following points form the boundaries of the survey:

Northwest	29°29.0'N	83°51.0'W
Northeast	29°29.0'N	83°30.5'W
Southeast	29°12.5'N	83°14.5'W
Southwest	29°12.5'N	83°39.5'W
West	29°25.0'N	83°50.5'W

The survey was accomplished between 12 February 1976 and 6 August 1976.

C. SOUNDING VESSELS

All sounding on this survey was accomplished with NOAA Launch 1255 (VESNO 1255) and NOAA Launch 1257 (VESNO 1257). All survey records are labled with vessel numbers. In addition, Launch 1255 has records annotated in blue, Launch 1257 in black.

D. SOUNDING EQUIPMENT AND CORRECTIONS TO ECHO SOUNDINGS

Launch 1255 used the following Raytheon equipment to obtain soundings during this survey:

Recorder, Model: DE-723 Unit: 723-40 S/N 2924
Digital Depth Monitor, Model: DE-723-41 Unit: DE-723D S/N 1045
Electronic Cabinet Unit, Model: DE-723-42 Unit: 723 S/N 278

Launch 1257 was equipped with the same Raytheon models and units. The serial numbers were as follows:

Recorder: Model DE 723, Unit 723-40, S/N 37024
Digital Depth Monitor: Model 723-41, S/N 2772
Electronic Cabinet Unit: Model DE-723, Unit 723-42, S/N 1910

Below is a summary of the methods used to determine, evaluate, and apply the various corrections to Launch 1255 echo soundings.

Velocity corrections were determined solely by the means of bar checks. Weather permitting, bar checks were taken every week in which hydro was run. When the survey was completed, the bar check lines were measured for accuracy and found to have shrunk. The resulting error was linear along the entire lengths of both lines. At the 50-foot mark, one line was actually 49.65 feet and the other was actually 49.55 feet. This averages to an error of -0.4 feet at the 50-foot mark. Therefore, the line correction was -0.8% at the time the lines were measured.

It can only be assumed that this error gradually increased from the time the bar check lines were originally marked until the error was discovered. Accordingly, it was prorated for each 0.2% from the time the lines were marked, in mid-December, 1975, until mid-August, 1976. The error was then taken into account before velocity corrections were determined.

The corrections themselves were determined by averaging the digital depths (down and up) for the various bar depths. These means were added to the transducer draft to obtain the applicable depths. This value was then subtracted from the true depth, which is the bar depth plus the line correction.

After all the corrections were determined, they were placed in tabular form (Abstract of Bar Check Corrections) with the corrections placed in columns below their applicable depths. By evaluating this table, it was determined that two velocity curves should be drawn. With the exception of five rejected values, corrections from bar checks taken on Days 043 through 131 and Days 161 through 220 were averaged. Two curves were then established by plotting average corrections versus the respective applicable depths. Then to make the velocity tables, depths were scaled off each time the correction changed 0.2 feet.

Digitized soundings are presumed to have no instrument error (including initial error). It follows that the analog

trace should be adjusted to fit the digital printout. This was done by comparing exact digital readings, obtained from the master printout, with their analog counterparts. The differences were applied to the analog trace while scanning. At times, the recorder initial was set off zero while underway to make the analog to digital correction equal to zero, thus eliminating the need to apply this correction while scanning. When this was done, however, it was well annotated on the fathogram.

On Day 085, the propellers on Launch 1255 were replaced with props which have less pitch. Accordingly, two settlement and squat correction curves must be applied to soundings obtained with Launch 1255 in this survey. Corrections prior to Day 085 came from settlement and squat determination on January 16, 1975, off Egmont Key, Florida. The standard rod and level method was used. At 1850 rpm, the speed at which hydro was run prior to Day 085, the correction was plus 0.1 feet.

At 2000 and 2100 rpm's, the speed at which hydro was run after Day 085, the correction is -0.1 feet. This was determined on April 28, 1976, off Cedar Key, Florida. The method used was as follows:

A line on which the vessel would run was defined via the hydroplot system. A point on this line where depths would be measured was further defined by noting the value of a Raydist arc which was being crossed. The line was run at various speeds and a depth was recorded at the moment the particular Raydist rate was crossed. Differences in depth between stopped and running at speed indicate the settlement and squat correction. Tide was accounted for by obtaining four depths for each speed - stopped, out at speed, back at speed, and stopped. By averaging the two depths while stopped over the point and then the two depths at speed, the effect of tide was eliminated. Data from both settlement and squat determinations are included in the appendix of this report.

Velocity corrections for Launch 1257 were determined solely by the direct comparison bar check method. Bar checks were taken on a weekly basis, when weather permitted. All bar checks are abstracted and included in the appendices.

After examining the bar check data, it was determined that two curves would have to be utilized in the final smooth plot. These curves were determined by averaging all bar checks from J.D. 043-182 and all bar checks from J.D. 183-215.

The two velocity corrector tapes determined from these curves are included with the survey data. The survey sheets sent in from Launch 1257 were plotted using prior determined velocity correctors. As a point of interest, the velocity correctors determined during the survey period agree quite well with the historical data determined during prior Launch 1257 surveys in the Gulf.

Settlement and squat data for Launch 1257 was determined prior to this survey. At standard survey speeds, Launch 1257 maintains a transducer draft correction of 2.4 feet. This value is the result of a 2.7-foot static draft and a settlement and squat correction of -.3 feet at standard hydro speed. 2.4 feet is shown as TRA on both master and corrector with a 0.0 settlement and squat correction applied on TC/TI. The only slow speed survey work was accomplished running checks of spikes and it is recommended that this work be plotted on an overlay. Changes in settlement and squat correctors are applied via the corrector tape for those periods of slow speed.

E. HYDROGRAPHIC SHEETS

The field sheets were prepared aboard the survey vessels using the hydroplot system. Verification and smooth-plotting will be done at the Atlantic Marine Center, Norfolk, Virginia. Projection and control parameters are in the appendix.

F. CONTROL STATIONS

Left (Red) station: Boggy, 1976
Right (Green) station: H-AMC-5-F1, 1975

Station location was accomplished by Mr. Jim Shea of Operations Division, Atlantic Marine Center, Norfolk, Virginia. Third-order methods were used. NAD 1927 was used for position computation.

G. HYDROGRAPHIC POSITION CONTROL

Control used for this survey was the Hastings Raydist DR-S system operating in the range-range mode. No known difficulties were experienced with the control system that may have degraded the expected position accuracy. At times, there was difficulty in receiving signals which was due to two things. One was difficulty in loading the left shore station, which was a 270-foot tower built by Lorac Corporation. The other was that Launch 1255's receiver (fourth party system) was receiving interference from Launch 1257's lower side band frequency. This problem was overcome by replacing the fourth party equipment aboard Launch 1255 with third party equipment. As stated above, it is not expected that these problems degraded position accuracy.

Shore station equipment:

Left Station, Red Raydist Model AA-60, S/N 55
Right Station, Green Raydist Model AA-60, S/N 119

Equipment aboard Launch 1255:

Antenna Loading Coil, Model QB-52B, S/N 194
DR-S System Navigator, Model ZA-67B
S/N 58 Julian Days 043 and 044
S/N 109 Julian Days 058 to 134
S/N 58 Julian Days 155 to 219
Raydist Transmitter Model TA-96B
S/N 45 Frequency 3306.520 Julian Days 043 - 044
S/N 37 Frequency 3306.495 Julian Days 058 - 219

Equipment aboard Launch 1257:

Antenna Loading Coil, Model QB-52B, S/N 143 J. D. 43-159
S/N 81 J. D. 160-215
DR-S System Navigator, Model ZA-67B, S/N 67
Transmitter, TA-96, S/N 86

Calibration of the Raydist system was accomplished by comparing observed Raydist values with actual values while alongside one of two fixed aids to navigation located with third order methods by Mr. Jim Shea. The offset distance from the Raydist antenna to the center of the fixed aid was accounted for by averaging pairs of observed readings taken on opposite sides of the aid. Usually four values (two pairs) were observed for each calibration. Calibrations were taken before and after hydro was run each day except when both stations stopped tracking during the day because of weather. The morning and afternoon calibrations generally agreed well indicating this data is adequate to be applied to raw data positions throughout the survey.

H. SHORELINE

There was no shoreline delineated on this survey.

I. CROSSLINES

Crosslines were run to the extent of 8.6% of the basic system of sounding lines. Crosslines on the inshore plotter sheet were run by Launch 1255. Those on the offshore sheet were run by Launch 1257. Both launches ran basic hydro on both sheets. Agreement with crosslines was very good.

J. JUNCTIONS *See Verifier's Report*

H-9589 junctions with two other surveys. On the south is H-9588. This survey was run concurrently with H-9589 using the same horizontal control and sounding vessels. Naturally, agreement is excellent.

The survey junctions with H-7818 on the west. This is a 1:100,000 scale survey run in 1950. Agreement of random soundings varies between 0 and 4 feet, ~~with the exception of an 8-foot difference at 29°15.1'N and 83°40.6'W. H-9589 has a 49-foot sounding, whereas H-7818 shows a 57-foot sounding.~~ Insomuch as it has been 26 years between surveys, it is highly probable that some shifting of the bottom has occurred. *concur* *Butt junction made with H-7818 (1950)* *JPS*

K. COMPARISON WITH PRIOR SURVEYS

There are no numbered presurvey review items on the sheet.

The survey area was previously covered by survey H-1928. This survey was conducted in 1889 and sounding density is very sparse. Also, depths on NOS Charts 11408 and 11407 (1259 and 1260), which lie within the H-9589 survey limits, are representative soundings taken directly from this old survey. For these reasons, comparison with this survey would be of little value. (Comparison with Charts 11407 and 11408 is made in the next section.)

Two dashed circle PSR items are located within the area surveyed by Launch 1257 on Survey H-9589. Both are 12-foot soundings and are located at (1) 29°~~15~~14.0'N and 83°17.6'W, and (2) 29°20.3'N and 83°22.7'W. The first of these was covered by 50 meter line spacing. The shoalest depth in the area was a ~~15~~12' sounding ~~approximately .2 n.m. to the north~~. The second dashed circle PSR item was located directly on top of a 12' sounding on the main scheme survey lines. The hydrographer recommends ~~deletion of the first PSR item and~~ retention on the chart of the second PSR item. *Four items are located within the survey area.*

L. COMPARISON WITH THE CHART *Also both of the items noted above were found.*

Charts 11407 (1260) and 11408 (1259), 1:80,000 scale charts, are the largest scale charts on which the survey lies. The areas on these charts which lie within the H-9589 survey limits were compiled directly from a survey run in the 1880's. Due to the fact that the sounding lines in this survey were spaced roughly a mile apart and possibly because shifting of the bottom characteristics may have occurred over the past 90 years, comparison with Chart 11407, 6th Edition, Nov. 23, 1974 and Chart 11408, 12th Edition, July 13, 1974 is poor. About 3/4 of the soundings agree within 3 feet but others differ by amounts up to 12 feet. The following table indicates some specific examples.

Launch 1257
AHP-49-2-76
H-9589

LATITUDE °	'	LONGITUDE °	'	CHARTED DEPTH ft.	SURVEY DEPTH ft. (Pos #)
29	28.6	83	45.4	48	43 ~~42~~ 2726+1
	28.8		41.3	40	34 ~~31~~ 816+4
	28.8		39.9	31	37 ~~36~~ 1221+1
	25.2		46.3	57	49 ~~48~~ 3673+2
	25.1		44.9	52	49 ~~48~~ 3381+2
	24.9		42.4	54	48 ~~46~~ 2846
	24.7		39.6	48	43 ~~42~~ 2030+3
	25.7		35.1	31	38 1653+5
	21.9		44.8	58	51 ~~52~~ 4027
	21.9		32.5	42	37 1448+3
	21.9		31.2	36	32 ~~31~~ 1774+1
	20.7		29.9	33	28 1772
	20.9		31.8	39	34 1380+5
	18.6		39.5	52	47 ~~45~~ 3621+3
	18.6		37.9	54	46 ~~45~~ 3248+4
	18.6		36.4	52	42 ~~40~~ 4189+1
	18.5		34.8	49	41 6842+5
	18.5		33.3	45	40 ~~39~~ 2169+5
	18.4		31.8	42	38 ~~37~~ 763
	18.4		30.5	34	32 1130
	18.4		29.4	36	28 1386
	16.1		28.9	34	28 ~~29~~ 823
	14.7		17.0	21	18 5503+5
	15.4		17.7	20	17 5502+3
	17.2		21.1	21	17 5084+3
	18.9		22.2	20	16 ~~17~~ 5207+3
	18.3		24.7	24	20 5722+5
	21.3		25.0	13	13 ~~16~~ 5018-2
	21.7		25.3	14	14 ~~18~~ 5154+3
	21.9		29.2	28	22 ~~23~~ 5950+2
	21.9		30.3	33	29 6235+3
	24.0		30.4	28	24 5761+1
	24.2		32.2	37	32 6156+2
	26.4		28.6	20	18 ~~17~~ 5394+2
	18.7		42.4	55	50 6345+5
	18.2		42 ~~45~~ .9	54	52 ~~51~~ 6567
	21.9		44.8	58	53 ~~52~~ 6426
	22.2		46.5	62	54 ~~59~~ 6532
	25.4		48.8	57	53 6359+5

In addition, due to the distant line spacing on the prior survey, a number of shoal soundings were obtained during this survey which were previously uncharted. Least depths over developed features are labled on the overlays and tabulated below, but there are also many other depths considerably shoaler than the surrounding charted depths. The entire area should be reviewed very carefully and new editions of the charts made on the basis of this survey, H-9588, 1:40,000, 1976 and H-9583, 1:40,000, 1975. Con our pos

Uncharted Least Depths

Latitude ° '	Longitude ° '	Depth ft.	Remarks
29 23.3	83 27.5	~~13~~ 12	Near charted 17
19.5	28.7	~~23~~	
16.1	28.3	~~23~~ 22	
15.0	26.0	~~20~~ 21	
14.1	28.1	~~27~~ 28	
13.4	26.5	~~25~~ 26	
13.3	23.1	~~22~~ 23	
13.5	17.9	~~12~~ 13	Near presurvey dashed-circled 12-1/2
14.1	28.8	~~28~~ 29	
13.9	35.1	~~38~~ 39	
17.5	36.3	~~38~~ 39	
18.9	33.5	~~35~~ 37	Near charted 45
23.6	44.2	~~44~~ 46	

The charted 45 is at Lat. 29°17.5 Long. 83°30.5

There is a 37+38 located in this area

M. ADEQUACY OF SURVEY

This survey is sufficiently complete and adequate to warrant its use to supercede prior surveys for charting.

N. AIDS TO NAVIGATION

Two aids to navigation are located within the survey area, Day Markers "14" Fl 6 sec 19 ft 7 M and "16" Fl 2 1/2 sec 19 ft 6 M. The geographic position of "14" is 29°19'36"N, 83°22'29"W, and the geographic position of "16" is 29°28'28"N, 83°28'24"W.

#14 is pos #5205 & 7755

#16 is pos # 7458-7462

LAUNCH 1257
40-2-76
H-9589

Latitude	Longitude	Least Depth on Survey	
29° 12.9'	83° 16.7'	12	40-2-76, Inshore
13.3'	17.0'	12	"
13.5'	16.2'	10	"
13.1'	19.7'	14 ~~17~~	"
16.0'	18.9'	12	"
16.1'	20.1'	13	"
16.2'	18.4'	10	"
16.6'	23.5'	18	"
17.6'	21.3'	14	"
17.6'	24.0'	19 ~~18~~	"
18.4'	24.9'	17 ~~15~~	"
19.1'	23.0'	14	"
20.3'	22.8'	10 ~~12~~	"
20.8'	24.1'	10 ~~12~~	"
22.2'	25.5'	12 ~~13~~	"
23.4'	27.3'	12 ~~15~~	"
23.6'	29.1'	19	"
24.7'	28.3'	16	"
25.6'	29.1'	~~17~~	"
26.7'	28.6'	15	"
28.1'	30.7'	16 ~~17~~	"
28.9'	31.2'	15	"

O. STATISTICS

	VESNO 1255	VESNO 1257	TOTAL
Total Number of Positions:		2927	
N. M. of Sounding Lines:	2249	1163.3	3412.3
N. M. of Crosslines:	148	146.7	294.7
N. M. of Development:	142	147.7	289.9
Total N. M. of Hydrography:	2539	1457.7	3996.7
Square N. M. of Hydrography:	205	117	322
Bottom Samples:	0	55	55

P. MISCELLANEOUS

This survey was worked on concurrently with H-9588, the 1:40,000 survey which junctions on the south. Raydist strip charts were separated after the survey was run; therefore, a break in lane count occurs on each day's strip chart when the survey vessel left one survey sheet to continue on the other. Calibration was obtained at a fixed aid to navigation when corrections to be applied annotated on the printouts of both surveys.

Numerous stray soundings were recorded by Launch 1257. A table follows of the position numbers of these soundings and the accompanying position numbers of lines run to check these soundings. In all cases, the hydrographer judged it probable that there be no obstruction present.

pos. 7463-7582

In developing the twelve foot curve on J.D. 204, it was discovered that numerous discrepancies existed between the development sounding and the main scheme soundings. This was discerned after smooth plotting the development data and contouring. The developed area was rerun on J.D. 211 at 95-meter intervals covering both the in-between splits and the original main scheme.

pos. 7588-7890

Because of the odd appearance of the trace, it was felt that an electronic problem might exist; so, prior to rerunning the area, three different receiver cards were tried in the electronic cabinet unit. All attained similar results. In addition, the blanking function was utilized in an attempt to clarify the bottom.

pos 7891-7926

On J.D. 212, divers were utilized to determine that the odd fathogram trace was caused by a long growth of grass which is apparently seasonal in nature, as little indication of this massive growth is found in the main scheme lines which were run earlier in the year. At the diver location, the grass was found to be 2.3' long. However, a lead line comparison in this area showed a probable correction of 1.1 foot. In addition, as the grass length appears to vary over the area in question, scaling of depths was highly subjective throughout the developed area.

Q. RECOMMENDATIONS

None.

R. AUTOMATED DATA PROCESSING

Program Number	Program Name	Version Date
RK 111	Range-Range Real Time Plot	1/30/76
RK 201	Grid, Signal and Lattice Plot	4/18/75
RK 211	Range-Range Non-Real Time Plot	1/15/76
RK 300	Utility Computations	2/05/76
PM 360	Electronic Corrector Abstract	2/02/76
RK 500	Predicted Tide Generator	11/10/72
AM 602	Elinore - Line Oriented Editor	5/20/75

S. REFERENCE TO REPORTS

H-9588 Descriptive Report.

Respectfully Submitted,

Robert Lewis
for/LCDR Albert Theberge, Jr.
OIC, Launch 1257

FIELD TIDE NOTE

Field tide reduction of soundings was based on predicted tides from St. Mark's River Entrance, Florida, corrected to Suwannee River Entrance, latitude 29°17', longitude 83°09'.

There were no tide gages installed by the hydro party within the limits of this survey.

Abstract of Bar Check Corrections
NOAA Launch 1255

Day	Depth (Ft.) 5.15	10.00	14.84	19.64	24.34	29.15	33.75	38.30	42.90
043	-----	-0.15	-0.85	0.20	----	----	----	----	----
055	-0.12	-0.03	0.11	0.34	----	----	----	----	----
061	-0.17	0.17	0.26	0.44	----	----	----	----	----
071	-0.22	0.17	0.26	0.59	0.82	0.66	1.10	----	----
110	-----	-0.25	-0.13	0.15	R 0.18	0.65	----	----	----
119	-----	-0.15	0.12	0.35	0.48	0.75	----	----	----
131	-----	-0.05	0.17	0.40	0.73	0.90	1.12	1.50	----
avg	-0.17	-0.04	0.11	0.35	0.68	0.74	1.11	1.50	----

Day	Depth (Ft.) 5.35	9.85	14.65	19.25	23.95	28.70	33.24	38.20	42.90	47.40
61	-----	0.20	0.27	0.60	R 1.03	1.10	1.37	1.40	----	----
167	-----	0.10	0.32	0.60	0.93	1.10	1.47	1.80	----	----
201	-----	-0.02	0.35	0.66	0.77	1.09	1.31	1.52	1.78	2.25
205	R -0.39	0.13	0.25	0.66	0.87	R1 1.49	R2 2.06	----	----	----
220	-----	0.22	0.35	0.61	0.82	0.99	----	----	----	----
avg	-----	0.13	0.31	0.63	0.85	1.07	1.38	1.57	1.78	2.25

Note: draft 2.7

ABSTRACT OF BARCHECKS
NOAA LAUNCH 1257

PROJECT CAR 5CB DATE 20 FEB. 16

LOCATION West Coast Florida DAY 051

DEPTH	draft 2.7	DIGITAL	DIFF.		FATHO.	DIFF.
5	2.2	2.3		2.2	2.3	
	Avg:	2.25	2.75			
10	7.4	7.3		7.5	7.4	
		7.35	2.65			
15	12.8	12.8		12.2	12.1	
		12.80	~~2.40~~ R			
20	16.9	16.9		16.8	16.9	
		16.9	3.10			
25						
30						
35						
40						
45						
50						
55						
60						
65						
70						
75						
80						

ABSTRACT OF BARCHECKS
NOAA LAUNCH 1257

PROJECT OPR 508 DATE 22 April '76

LOCATION West Coast Florida DAY 113

DEPTH		draft 2.7 DIGITAL	DIFF.		FATHO.	DIFF.
5	—	2.3		—	—	
	Ave:	2.30	2.70			
10	7.6	7.6		7.5	7.4	
		7.60	2.40			
15	12.1	12.8		12.1	12.2	
		12.45	2.55			
20	16.7	16.8		16.7	16.9	
		16.75	3.25			
25	21.5	21.5		21.5	21.5	
		21.50	3.50			
30	26.3	26.1		26.5	26.4	
		26.20	3.80			
35	31.6	—		31.5	—	
		31.60	~~3.40~~ R			
40						
45						
50						
55						
60						
65						
70						
75						
80						

(4-30-57)
GPO 16-25424

ABSTRACT OF BARCHECKS
NOAA LAUNCH 1257

PROJECT OPR 508 DATE 28 APR. 76

LOCATION WEST COAST FLORIDA DAY 119

DEPTH		draft 2.7 DIGITAL	DIFF.		FATHO.	DIFF.
5	2.4	2.5		—	—	
	Ave.	2.45	2.55		—	—
10	7.2	7.3		7.2	7.4	
	Ave.	7.25	2.75		7.3	
15	11.9	12.1		12.0	12.2	
	Ave	12.0	3.00		12.1	
20	16.7	16.8		16.8	16.9	
	Ave	16.75	3.25		16.85	
25	21.5	21.5		21.7	21.7	
	Ave.	21.5	3.50		21.70	
30	26.2	26.1		26.4	26.3	
	Ave.	26.15	3.85		26.35	
35						
40						
45						
50						
55						
60						
65						
70						
75						
80						

ABSTRACT OF BARCHECKS
NOAA LAUNCH 1257

PROJECT OPR 508 DATE 10 JUN 76

LOCATION West Coast Florida DAY 162

DEPTH		draft 2.7 DIGITAL	DIFF.		FATHO.	DIFF.
5	2.4	—		2.4	—	
	ave:	2.40	2.60			
10	7.3	7.0		7.3	7.2	
		7.15	2.85			
15	11.9	11.9		11.9	12.0	
		11.90	3.10			
20	16.8	~~15.4~~		16.8	15.5	
		16.8	3.20			
25	21.2	~~20.2~~		21.4	20.2	
		21.2	3.80			
30	26.2	26.2		26.5	26.2	
		26.2	3.80			
35	30.7	30.7		31.0	30.7	
		30.7	4.30			
40	35.9	35.7		35.8	35.7	
		35.8	4.20			
45	40.81	40.5		40.7	40.5	
		40.65	4.35			
50	45.1	45.2		45.3	45.3	
		45.15	4.85			
55						
60						
65						
70						
75						
80						

ABSTRACT OF BARCHECKS
NOAA LAUNCH 1257

PROJECT OPR 508 DATE 19 July 76

LOCATION West Coast FLORIDA DAY 201

DEPTH		draft 2.7 DIGITAL	DIFF.		FATHO.	DIFF.
5	2.1	2.3		—	—	
	Ave:	2.20	2.80			
10	6.9	6.8		7.1	7.1	
		6.85	3.15			
15	11.8	11.5		11.8	11.7	
		11.65	3.35			
20	16.4	16.2		16.5	16.3	
		16.3	3.70			
25	21.2	21.0		21.2	21.1	
		21.15	3.85			
30	25.9	25.9		25.9	25.9	
		25.90	4.10			
35	30.6	30.6		30.7	30.6	
		30.60	4.40			
40	35.3	35.3		35.5	35.4	
		35.30	4.70			
45	40.1	40.0		40.2	40.2	
		40.05	4.95			
50	44.8	44.8		44.9	44.7	
		44.80	5.20			
55	49.6	49.7		49.8	49.9	
		49.65	5.35			
60						
65						
70						
75						
80						

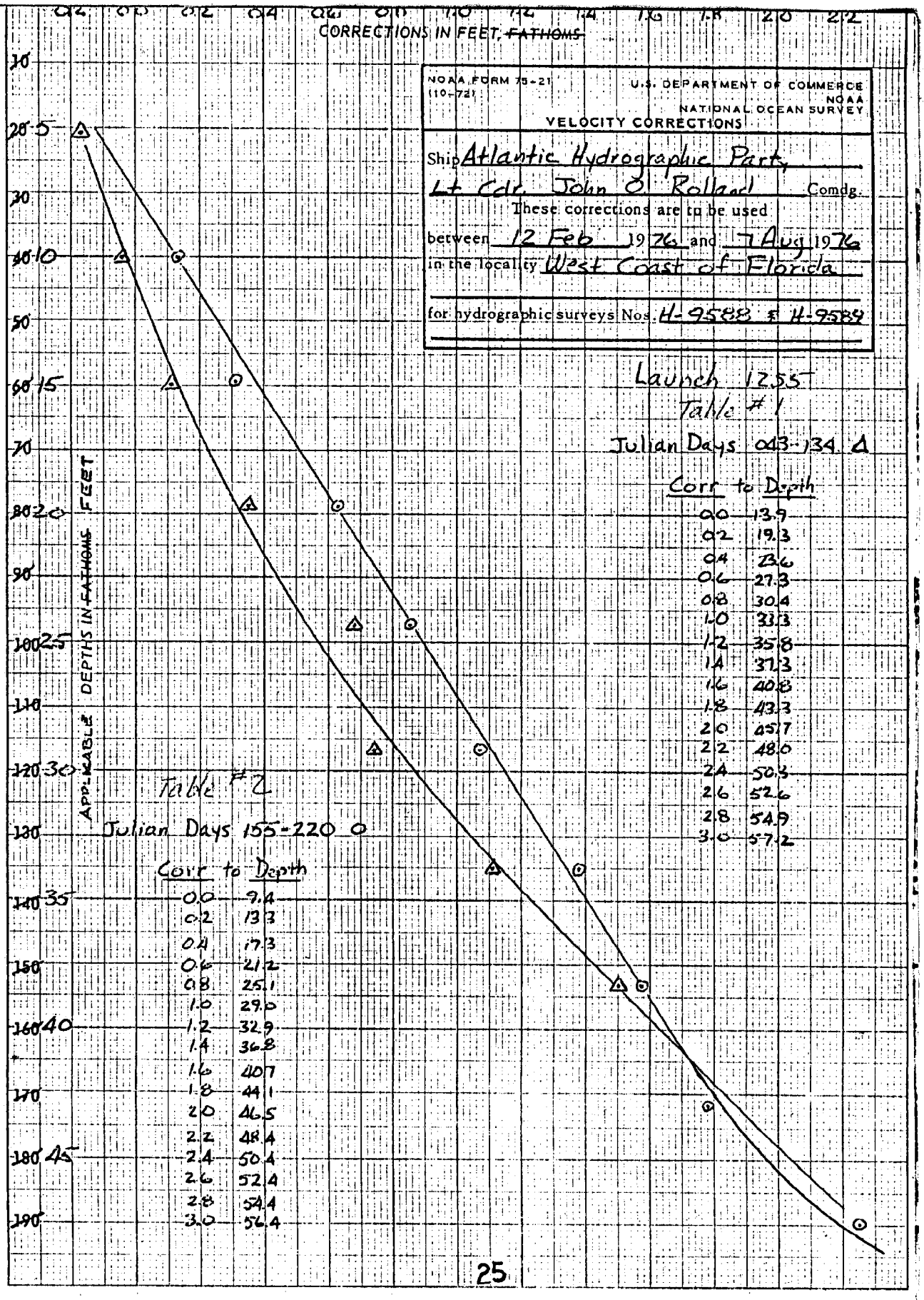
FORM NO. 37
(4-30-57)
ESSA-C&GS 20424

ABSTRACT OF BARCHECKS
NOAA LAUNCH 1257

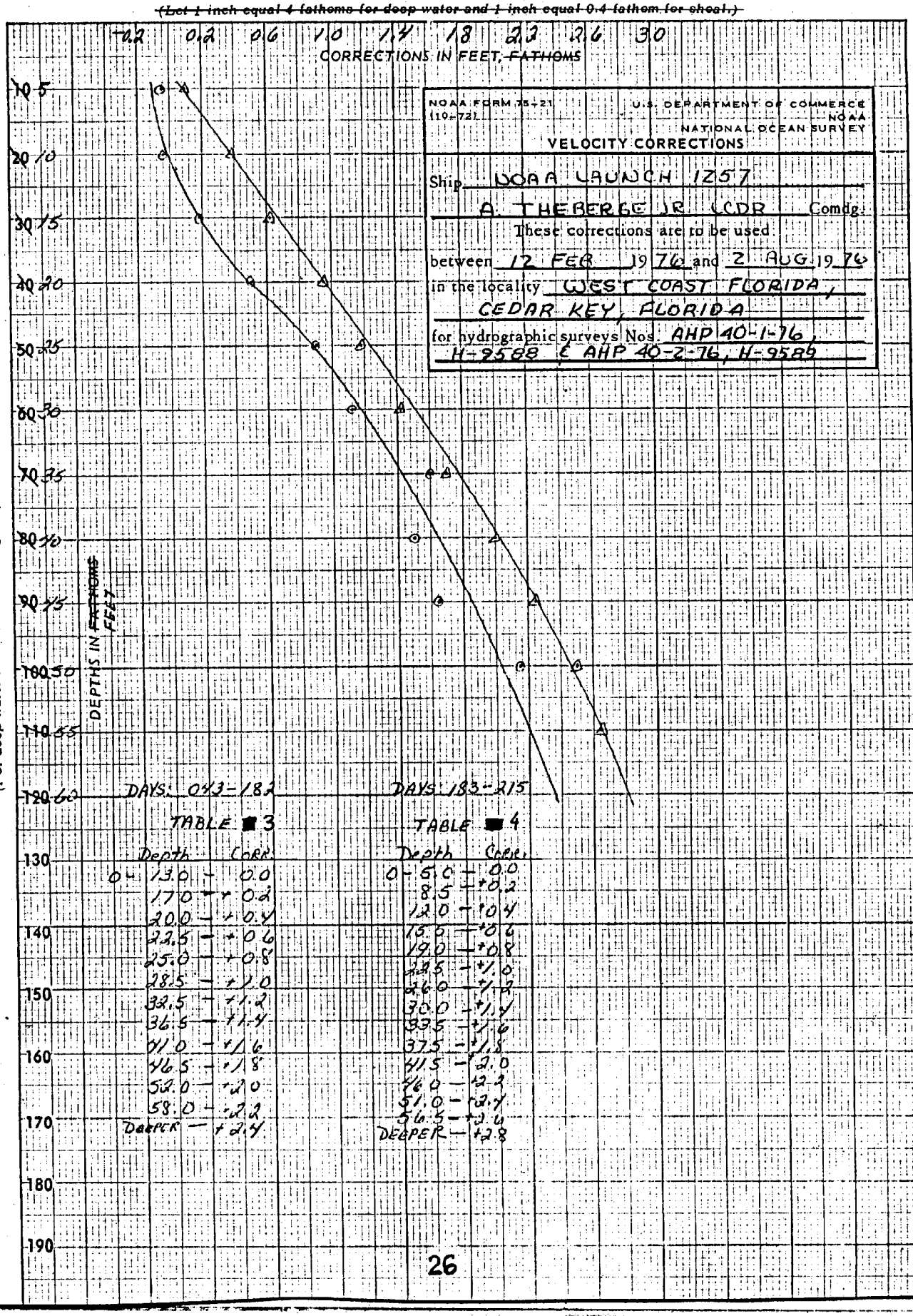
PROJECT OPR 508 DATE 23 July 76

LOCATION West Coast Florida DAY 205

DEPTH		draft 2.7 DIGITAL	DIFF.		FATHO.	DIFF.
5	2.2	2 2	2.80	—	—	
	Ave:	2.20				
10	7.0	7.0		7.0	7.0	
		700	3.00			
15	11.7	11.7		11.7	11.8	
		11 70	3.30			
20	16.4	16.4		16.4	16.4	
		16.40	3.60			
25	21.1	21.1		21.2	21.2	
		2110	3.90			
30	259	25.8		259	25.8	
		25.85	4.15			
35						
40						
45						
50						
55						
60						
65						
70						
75						
80						



~~(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)~~



NOAA FORM 76-21 (10-72) U.S. DEPARTMENT OF COMMERCE NOAA NATIONAL OCEAN SURVEY

VELOCITY CORRECTIONS

Ship NOAA LAUNCH 1257

A. THEBERGE JR LCDR Comdg.

These corrections are to be used

between 12 FEB 1976 and 2 AUG 1976

in the locality WEST COAST FLORIDA, CEDAR KEY, FLORIDA

for hydrographic surveys Nos. AHP 40-1-76, H-9588 & AHP 40-2-76, H-9585

(For deep water add a 0 to these figures)

TABLE 3

Depth	Corr.
0 – 13.0	– 0.0
17.0	+ 0.2
20.0	+ 0.4
22.5	+ 0.6
25.0	+ 0.8
28.5	+ 1.0
32.5	+ 1.2
36.5	+ 1.4
41.0	+ 1.6
46.5	+ 1.8
52.0	+ 2.0
58.0	+ 2.2
Deeper	+ 2.4

TABLE 4

Depth	Corr.
0 – 5.0	– 0.0
8.5	+ 0.2
12.0	+ 0.4
15.0	+ 0.6
19.0	+ 0.8
22.5	+ 1.0
26.0	+ 1.2
30.0	+ 1.4
33.5	+ 1.6
37.5	+ 1.8
41.5	+ 2.0
46.0	+ 2.2
51.0	+ 2.4
56.5	+ 2.6
Deeper	+ 2.8

SETTLEMENT AND SQUAT CORRECTIONS

NOAA LAUNCH 1257

3 May 1976

(Level Method)

RPM	CORR.	
600 (idle)	+ .03	
1100 (slow)	+ .41	(+ .4)
1950 (standard)	- .28	(- .3)

Settlement and Squat Determination
NOAA Launch 1255
16 January 1975
Egmont Key, Florida

	RPM's	Stop	Out	Back	Stop	Average Stop	Average At Speed	Settlement & Squat
(Idle)	500	2.36	2.43.	2.40	2.33	2.34	2.41	+0.07
	1000	2.33	2.68	2.70	2.32	2.32	2.69	+0.37
	1250	2.32	2.76	2.74	2.27	2.30	2.75	+0.45
	1500	2.27	2.60	2.64	2.28	2.27	2.62	+0.35
(Full)	1850	2.27	2.33	2.35	2.26	2.26	2.34	+0.08

NOAA Launch 1255

Settlement & Squat Determination

April 28, 1976

Cedar Key, Florida

Speed (RPM)	Stopped	Depths Out	Depths Back	Stopped	Average Stopped	Avg at Speed	Settlement and Squat
500	22.7	22.9	22.8	22.7	22.7	22.85	-0.15
750	22.7	22.6	22.6	22.7	22.7	22.6	+0.10
1000	22.7	22.4	22.3	22.5	22.6	22.35	+0.25
1250	22.5	21.9	21.9	22.4	22.45	21.9	+0.55
1500	22.4	21.9	21.8	22.0	22.2	21.85	+0.35
1750	22.0	21.8	21.9	22.1	22.05	21.85	+0.20
2000	22.1	22.2	22.1	22.0	22.05	22.15	-0.10
2250	22.0	22.0	21.9	21.7	21.85	21.95	-0.10

SIGNAL LIST

OPR-508 AHP-75

AHP 40-2-76

H-9589

VESNO 1257

											Located By CAN!
001	7	29	28	05050	083	18	17847	250	0000	330640	BOGGY, 1976	"Shea"
002	7	29	07	43520	083	03	07558	250	0000	330640	H-AMC-S-FL, 1975	"Shea"
100	7	29	03	59367	083	04	33399	139	0000	000000	FL 4 SEC 16' "1"	"Shea"
101	7	28	58	30019	083	09	15238	139	0000	000000	FL 6 SEC 43' "7M"	"Shea"

Frequency for Lch 1255 – 3306.50

OPR 508

AHP 40-2-76

H-9589

ABSTRACT OF POSITIONS NOT TO BE PLOTTED

NOAA LAUNCH 1257

Day	From Position	To Position	Remarks
202	7360	7398	
	7400	7401	
	7406	7407	
203	7409	7462	NOTE: 7459-7462 are DP's on ~~DP~~ L+ "16".
204	7463	7587	This area was rerun on J.D. 211.
211	7588	7597	Edited off R/R Master.
212	7891	7926	

APPROVAL SHEET

SURVEY H-9589 (AHP-40-2-76)

The hydrographic records transmitted with this report are complete and adequate.

No direct supervision was given by me during field work and the field sheet was examined only during routine field inspection of the hydro party.

This survey is complete and adequate with no additional field work recommended.

William R. Daniels
LCDR, NOAA
Chief, HSB

March 22, 1977 U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center:

Hourly heights are approved for

Tide Station Used (NOAA Form 77-12): Cedar Key
Suwannee

Period: February 12 - August 5, 1976

HYDROGRAPHIC SHEET: H-9589

OPR: 508

Locality: Florida west coast

Plane of reference (mean ~~lower~~ diurnal low water): 1.75 ft. - Cedar Key
0.57 ft. - Suwannee

Height of Mean High Water above Plane of Reference is
Cedar Key: 3.2 ft.

Remarks: Recommended zoning:

Apply + 10 minute time correction and range ratio x0.92 to Cedar Key.

From June 1 - July 16 (no data at Cedar Key) use Suwannee applying the following time corrections:

High water	Low water
+15 min.	-15 min.

James C Hubbard
for Chief, Tides Branch

NOAA FORM 76-155
(11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

SURVEY NUMBER

H-9589

GEOGRAPHIC NAMES

Name on Survey	A ON CHART NO.	B ON PREVIOUS SURVEY NO.	C ON U.S. QUADRANGLE MAPS	D FROM LOCAL INFORMATION	E ON LOCAL MAPS	F P.O. GUIDE OR MAP	G RAND MCNALLY ATLAS	H U.S. LIGHT LIST	K	
GULF OF MEXICO										1
HORSESHOE PT. (TITLE)										2
FLORIDA (TITLE)										3
										4
										5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
										17
										18
						APPROVED				19
						Chas. E. Harrington				20
						GEOGRAPHER C3x8				21
						9 JUNE 1978				22
										23
										24
										25

NOAA FORM 76-155 SUPERSEDES C&GS 197

U.S. G.P.O. 1972-769-565/516 REG.#6

APPROVAL SHEET
FOR
SURVEY H-9589

A. All revisions and additions made on the smooth sheet during verification have been entered in the magnetic tape records for this survey. A new final position printout has/~~has not~~ been made. A new final sounding printout has/~~has not~~ been made.

B. The verified smooth sheet has been inspected, is complete, and meets the requirements of the Provisional Hydrographic Manual. Exceptions are listed in the Verifier's Report.

Date: 4-4-78

Signed: [signature]

Title: For Chief, Verification Branch

NOAA FORM 77-27 (5-77) | U. S. DEPARTMENT OF COMMERCE NOAA | HYDROGRAPHIC SURVEY NUM.

HYDROGRAPHIC SURVEY STATISTICS

H-9589

RECORDS ACCOMPANYING SURVEY: To be completed when survey is registered.

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET	1	BOAT SHEETS & PRELIMINARY OVERLAYS	18
DESCRIPTIVE REPORT	1	SMOOTH OVERLAYS: POS. ARC, EXCESS	3

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACT SOURCE DOCUMENTS
ENVELOPES	2		2/			1-misc. data
CAHIERS	4-with P.O.'s					
VOLUMES	2					
BOXES			1-smooth			1-box sawtooth records

T-SHEET PRINTS (List)

SPECIAL REPORTS (List)

OFFICE PROCESSING ACTIVITIES

The following statistics will be submitted with the cartographer's report on the survey

PROCESSING ACTIVITY	AMOUNTS: PRE-VERIFICATION	AMOUNTS: VERIFICATION	AMOUNTS: TOTAL
POSITIONS ON SHEET			2927
POSITIONS CHECKED		350	
POSITIONS REVISED		30	
SOUNDINGS REVISED		425	
SOUNDINGS ERRONEOUSLY SPACED		0	
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED		0	
	TIME – HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	2		
VERIFICATION OF CONTROL		2	
VERIFICATION OF POSITIONS		47	
VERIFICATION OF SOUNDINGS	13	116	
COMPILATION OF SMOOTH SHEET		18	
APPLICATION OF TOPOGRAPHY		0	
APPLICATION OF PHOTOBATHYMETRY		0	
JUNCTIONS		3	
COMPARISON WITH PRIOR SURVEYS & CHARTS		18	
VERIFIER'S REPORT		12	
OTHER		104	
TOTALS	15	320	335

Pre-Verification by R. Keene	*Beginning Date* 03/11/77	*Ending Date* 03/11/77
Verification by R. Keene, F. Lamison, R. Hill	*Beginning Date* 04/12/77	*Ending Date* 03/28/78
Verification Check by B. J. Stephenson	*Time (Hours)* 3	*Date* 03/29/78
Marine Center Inspection by Hydrographic Inspection Team (AMC)	*Time (Hours)* 15	*Date* 04/07/78
Quality Control Inspection by F.P. SAULSBURY	*Time (Hours)* 20	*Date* 5/2/78
Requirements Evaluation by D-Hill	*Time (Hours)* 1	*Date* 7/25/78

- D R Engle 4 6-9-78

REGISTRY NO. H-9589(1976)

The Computer and Excess Sounding Cards for this survey have not been corrected to reflect the changes made to the Computer Card and Excess Card Printouts at this time of the review.

When the cards have been updated to reflect the final results of the survey, the following shall be completed:

CARDS CORRECTED

DATE_____ TIME REQUIRED_____ INITIALS_____

REMARKS:

REGISTRY NO. _____

The magnetic tape containing the data for this survey has not been corrected to reflect the changes made during evaluation and review.

When the magnetic tape has been updated to reflect the final results of the survey, the following shall be completed:

MAGNETIC TAPE CORRECTED

DATE 10-13-82 TIME REQUIRED_____ INITIALS JHC

REMARKS:

H-9589

Information for Future Presurvey Reviews

None

Position Index		Bottom Change	Use	Resurvey
Lat.	Long.	Index	Index	Cycle
291	835	2	1	50 years
291	834	2	1	50 years
291	833	3	2	50 years
291	832	4	2	25 years
292	840	2	1	50 years
292	835	2	2	50 years
292	834	3	2	50 years
292	833	3	2	50 years

ATLANTIC MARINE CENTER
VERIFIER'S REPORT

REGISTRY NO. H-9589 FIELD NO. AHP-40-2-76

Florida, West Coast of Florida, Offshore of Horseshoe Point

SURVEYED: February 12 through August 6, 1976

SCALE: 1:40,000 PROJECT NO.: OPR-508

SOUNDINGS: DE-723D Depth Recorder CONTROL: Raydist (Range-Range)

Chief of Party ..... J. O. Rolland
Surveyed by ..... W. R. Daniels
..... D. M. Wilson
..... A. E. Theberge
..... D. A. Drake
..... R. P. Floyd
..... S. R. Ellis
Automated Plot by ..... CALCOMP-618 Plotter (AMC)
Verified and Inked by ..... R. R. Hill
March 28, 1978

1. Introduction

During verification of this survey no unusual problems were encountered.

2. Control and Shoreline

a. The source of control is adequately described under Sections F and G of the Descriptive Report. ✓

b. This is an offshore survey and no shoreline is shown. ✓

3. Hydrography

a. Depths at crossings were in good agreement. ✓

b. The standard depth curves were adequately delineated. Additional brown curves and supplemental 24- and 36-foot curves were included in some areas to further delineate the bottom configuration. ✓

c. The development of the bottom configuration and the investigation of least depths were considered adequate. ✓

4. Condition of Survey

The smooth sheet and accompanying overlays, hydrographic records and reports are adequate and conform to the requirements of the Provisional Hydrographic Manual, except as follows: ✓

a. Of the five dashed-circled Presurvey Review items located within the limits of the present survey, the disposition of three was not discussed in the Descriptive Report. ✓ All found on survey

b. The field failed to make a comparison with Chart #11400. Comparison made. JPS.

c. Weekly bar checks for the determination of velocity corrections, indicated by the hydrographer in Section D of the Descriptive Report, are too infrequent. See Section 4.9.5.1.1. of the Provisional Hydrographic Manual. ✓

5. Junctions

Adequate junctions were effected with the following surveys:

H-9641 (1976) on the north ✓
H-9642 (1976) on the northwest not req. 4-28/78
H-9588 (1976) on the south ✓

An adequate junction on the west could not be effected with H-7818 (1950) due to differences in depths in the junctional area. It is recommended that a butt junction be effected with this survey. Butt junction made - JPS.

There are no contemporary surveys to the east. ✓

6. Comparison With Prior Surveys

H-1376 (1877) 1:20,000
H-1377b (1877) 1:20,000
H-1928 (1889) 1:80,000

The above prior surveys, taken together, provide complete coverage of the present survey area. Depths in general were found to be two to six feet deeper on the prior surveys west of the 18-foot curve, with more favorable agreement to the east. In the vicinity of latitude 29° 13.2', longitude 83° 31' and latitude 29° 25.6', longitude 83° 38', depths were noted as being two to seven feet shoaler on the prior surveys. These differences can be attributed to natural changes in the bottom configuration and improved survey methods. ✓

Attention is directed to the following Presurvey Review items:

Present Survey

1259 12 feet at latitude 29° 14.0', longitude 83° 17.6' 12-ft
1259 12 feet at latitude 29° 20.3', longitude 83° 22.7' 10-ft-least depth
1259 14 feet at latitude 29° 21.0', longitude 83° 25.8' 14ft, near-by
1259 16 feet at latitude 29° 22.0', longitude 83° 26.9' 16ft, near-by
31 feet at latitude 29° 29.8', longitude 83° 39.8' 31-ft, ~100 meters west

28.8

The above dashed-circled Presurvey Review items are located within the limits of the present survey, and originate with the prior surveys. On each of these items the present survey's hydrography verifies their existence. The charted depths should be superseded by the present survey's depths.

The present survey is adequate to supersede the prior surveys within the common area. concur JJS.

7. Comparison With Charts 11407 (6th Edition, November 23, 1974)
1259 11408 (12th Edition, July 13, 1974)
11400 (15th Edition, November 8, 1975)

a. Hydrography

The charted hydrography originates with the previously discussed prior surveys and requires no further consideration.

The present survey is adequate to supersede the charted hydrography.

b. Aids to Navigation

The aids to navigation located on the present survey are in substantial agreement with their charted positions and adequately serve the purposes intended.

8. Compliance With Instructions

This survey adequately complies with project instructions.

9. Additional Field Work

This is considered a (excellent) good basic survey and no additional field work is recommended.

Inspection Report
H- 9689

Any verification errors regarding procedures and presentation of survey data detected during inspection by the Hydrographic Inspection Team have been corrected before submission for administrative approval. HIT comments regarding quality of field work, compliance with instructions, and adequacy of the survey have been incorporated within the Verifier's Report.

Examined and Approved:
Hydrographic Inspection Team
Date: April 7, 1978

Robert A. Trauschke, CDR, NOAA
Chief, Processing Division

Absent
Charles H. Nixon, CAPT, NOAA
Chief, Operations Division

R. D. Sanocki
Technical Assistant
Processing Division

C. Douglas Mason, LT, NOAA
Chief, Electronic Data
Processing Branch

Billy J. Stephenson
Team Leader
Verification Branch

Approved/Forwarded

Robert C. Munson
RADM, NOAA
Director, Atlantic Marine Center

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY
Rockville, Md. 20852

C35x/FPS

May 2, 1978

TO: A. J. Patrick
Chief, Marine Surveys Division

THRU: Chief, Quality Control Branch

FROM: F. P. Saulsbury
Quality Evaluator

SUBJECT: Quality Control Report for H-9589 (1976), Florida, West Coast of Florida, Offshore of Horseshoe Point

A quality control inspection of H-9589 was accomplished to monitor the survey for obvious deficiencies with respect to data acquisition, delineation of the bottom, determination of least depths, navigational hazards, junctions, sounding line crossings, smooth plotting, decisions and actions taken by the verifier, and the cartographic presentation of data. In general, it was found to conform to the National Ocean Survey's standards and requirements except as stated in the report by the verifier and as follows:

1. A few supplemental curves were added to emphasize shoal soundings or rises.

2. Raydist control station "Boggy, 1976" was added to the arc overlay.

3. Because of scale limitations many deep soundings had been excessed. However, selected soundings and bottom delineating depth curves furnish an adequate representation of the bottom for charting.

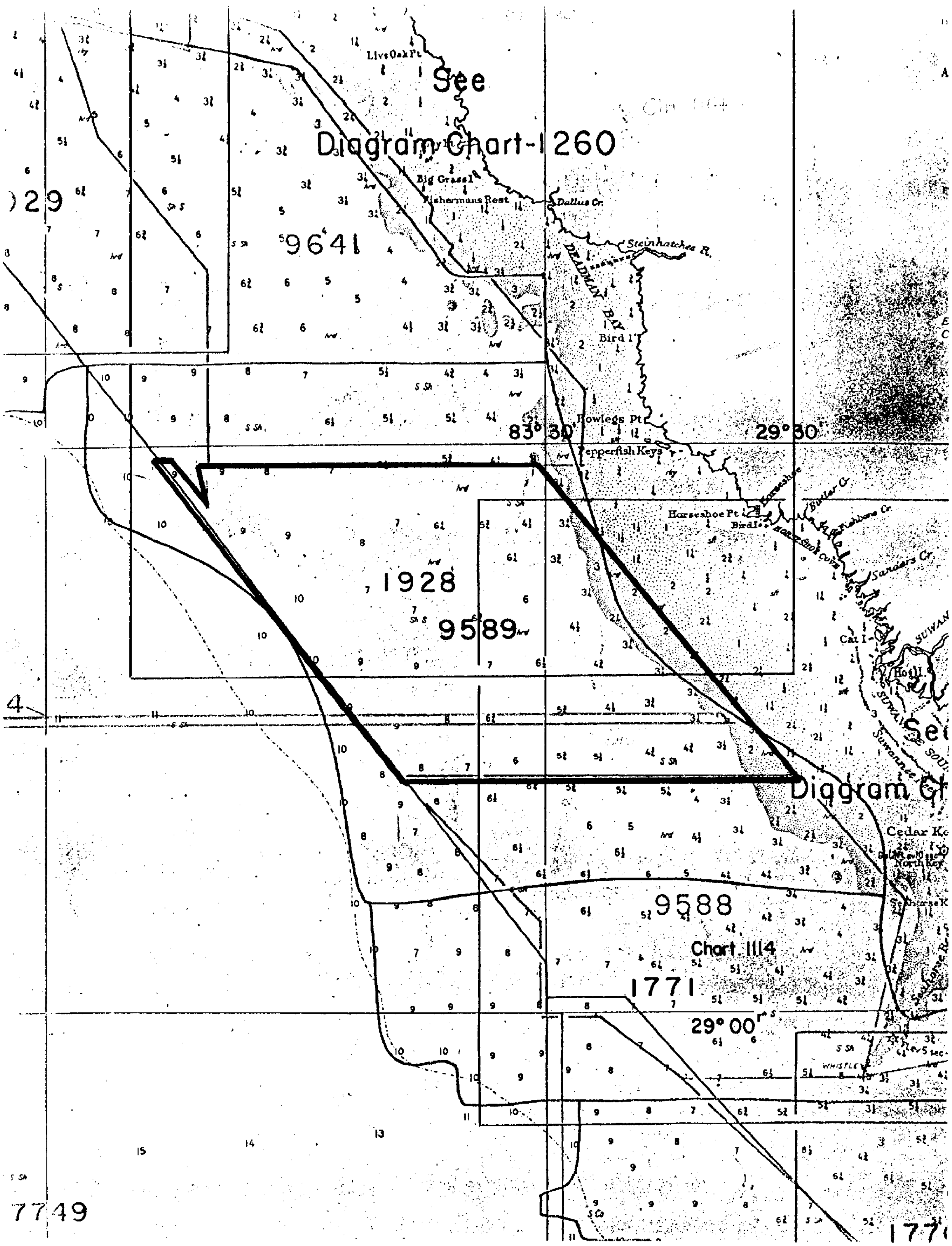
4. With a few revisions to make depth curves coincidental, an adequate junction was effected with H-9588 (1976) on the south.

An adequate junction was effected with H-9641 (1976) on the north. Some contradictory deep soundings were rejected and some shoal soundings transposed in order to make depth curves in the overlap area coincidental.

In the overlap area with H-7818 (1950) on the west, soundings on the present survey are generally 2 to 3 feet shoaler than prior soundings. Because of this, a butt junction was effected with H-7818 (1950). Present survey depths supersede those on the 1950 survey.

The junction on the northwest with H-9642 (1976) will be evaluated during the inspection of that survey.

cc:
C35
C351



See
Diagram Chart-1260
Live Oak Pt
Big Grass I
Fishermans Rest
Dallus Cr.
Steinhatchee R.
DEADMAN BAY
Bird I
Bowlegs Pt
Pepperfish Keys
Horseshoe Pt
Bird I
Sanders Cr.
Cat I.
Hog I.
SUWANNEE SOUND
Suwannee R.
Diagram Ch
Cedar K
North Key
Seahorse K
Whistle
83° 30'
29° 30'
29° 00'
029
9641
1928
9589
9588
Chart 1114
1771
7749
177

FORM C&GS-8352
(3-25-63)

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9589

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART (1260)	DATE	CARTOGRAPHER	REMARKS
11407	8-25-78	Paul L. Yee	~~Full~~ Part ~~Before~~ After Verification Review Inspection Signed Via
			Drawing No. 14 CRITICAL CORRECTIONS ONLY
11407	12-12-78	Paul L. Yee	Full ~~Part Before~~ After ~~Verification Review~~ Inspection Signed Via
			Drawing No. 15
11408	5-18-79	J. OWYANG	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 27
11400	9-16-79	D. Williams	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. 29
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.

FORM C&GS-8352 SUPERSEDES ALL EDITIONS OF FORM C&GS-975.

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